IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of blending a subpicture signal and a video signal comprising:

receiving a subpicture signal, the subpicture signal providing a plurality of alpha values and information identifying or to identify a plurality of subpicture Y, U and V values;

receiving a video signal, the video signal including a set of Y values, a set of U values and a set of V values provided in a planar format;

blending, in a first pass, each of the Y values of the video signal with a corresponding Y value of the subpicture signal based on a corresponding alpha value to generate a set of blended Y values;

blending, in a second pass, each of the U values of the video signal with a corresponding U value of the subpicture based on a corresponding alpha value to generate a set of blended U values;

blending, in a third pass, each of the V values of the video signal with a corresponding V value of the subpicture based on a corresponding alpha value to generate a set of blended ~~Y~~ V values;

wherein the generated sets of blended Y values, U values and V values are provided in a planar format and the Y, U and V values of the video signal are provided in a 4:2:0 format, and wherein the steps of blending are performed using multiple passes in a 4:2:0 format, and wherein a same subpicture data structure to be used when blending in the first pass, the second pass and the third pass.

2. (Original) The method of claim 1 wherein the step of receiving a subpicture signal comprises the step of receiving a subpicture signal, the subpicture signal including a plurality of alpha values and a plurality of palette indexes.

3. (Original) The method of claim 2 and further comprising the step of identifying subpicture Y, U and V values based upon the palette indexes.

4. (Canceled).

5. (Original) The method of claim 1 wherein the step of blending each of the Y values comprises the steps of:

performing motion compensation on each of the Y values of the video signal; and

blending each of the motion compensated Y values of the video signal with a corresponding Y value of the subpicture based on a corresponding alpha value to generate a set of blended Y values.

6. (Original) The method of claim 1 wherein the step of blending each of the U values comprises the steps of:

performing motion compensation on each of the U values of the video signal; and

blending each of the motion compensated U values of the video signal with a corresponding U value of the subpicture based on a corresponding alpha value to generate a set of blended U values.

7. (Original) The method of claim 1 wherein the step of blending each of the V values comprises the steps of:

performing motion compensation on each of the V values of the video signal; and

blending each of the motion compensated V values of the video signal with a corresponding V value of the subpicture based on a corresponding alpha value to generate a set of blended V values.

8. (Original) The method of claim 1 wherein the step of receiving a subpicture signal comprises the step of receiving a subpicture signal, the subpicture signal including a plurality of alpha values and a plurality of palette indexes;

the method further comprising the steps of:

loading a palette with subpicture Y values and identifying one or more subpicture Y values based upon one or more of the palette indexes prior to the step blending each of the Y values of the video signal;

loading the palette with subpicture U values and identifying one or more subpicture U values based upon one or more of the palette indexes prior to the step blending each of the U values of the video signal; and

loading the palette with subpicture V values and identifying one or more subpicture V values based upon one or more of the palette indexes prior to the step blending each of the V values of the video signal.

9. (Original) The method of claim 1 and further comprising converting the sets of blended Y values, U values and V values from a planar YUV 4:2:0 format to an interleaved YUV 4:2:2 format.

10. (Original) The method of claim 9 and further comprising the step of color converting the blended Y values, U values and V values from a YUV 4:2:2 format to a RGB format.

11. (Original) The method of claim 1 wherein said steps of blending are performed at render time.

12. (Original) The method of claim 1 wherein the video signal comprises a DVD video signal, and wherein the subpicture signal comprises a DVD subpicture signal.

13. (Original) The method of claim 3 wherein the step of identifying subpicture Y, U and V values based upon the palette indexes comprises the steps of:

loading a palette with subpicture Y values, identifying one or more subpicture Y values based one or more indexes, and performing the step of blending each of the Y values in a first pass;

loading a palette with subpicture U values, identifying one or more subpicture U values based one or more indexes, and performing the step of blending each of the U values in a second pass;

loading a palette with subpicture V values, identifying one or more subpicture V values based one or more indexes, and performing the step of blending each of the V values in a third pass.

14. (Currently Amended) A method of blending a subpicture signal and a video signal comprising:

receiving a subpicture signal, the subpicture signal providing a plurality of subpicture values, each subpicture value including an alpha value and an index to a subpicture palette;

receiving a video signal including a set of Y values, a set of U values and a set of V values, the sets of Y, U and V values being provided in a planar format;

based on a corresponding alpha value, blending, in a first pass, each of the Y values of the video signal with a Y palette value referenced by a corresponding subpicture palette index to generate a set of blended Y values;

based on a corresponding alpha value, blending, in a second pass, each of the U values of the video signal with a U palette value referenced by a corresponding subpicture palette index to generate a set of blended U values;

based on a corresponding alpha value, blending, in a third pass, each of the V values of the video signal with a V palette value referenced by a corresponding subpicture palette index to generate a set of blended V values;

wherein the sets of blended Y values, U values and V values being provided in a planar format, the Y, U and V values being provided in a 4:2:0 format, and blending is performed using multiple passes in a 4:2:0 format, and wherein a same subpicture data structure to be used when blending in the first pass, the second pass and the third pass.

15. (Original) The method of claim 14 and further comprising the steps of:

loading the subpicture palette with a plurality of subpicture Y palette values before performing the step of blending each of the Y values of the video signal;

loading the subpicture palette with a plurality of subpicture U palette values before performing the step of blending each of the U values of the video signal; and

loading the subpicture palette with a plurality of subpicture V palette values before performing the step of blending each of the V values of the video signal.

16. (Original) The method of claim 15 wherein the subpicture palette comprises a texture palette loaded with subpicture values for performing the steps of blending.

17. (Currently Amended) A circuit for blending video signals and subpicture signals comprising:

a palette to output at least one subpicture value based on a palette index;

an alpha-blend unit coupled to the subpicture palette to blend a set of luminance values of a video signal with a set of luminance values of a subpicture signal in one pass and to blend a set of chrominance values of the video signal with a set of chrominance values of the subpicture signal in a separate pass, the luminance and chrominance values of the video signal being provided to the alpha-blend unit in a planar format, the Y, U and V values of the video signal are provided in a 4:2:0 format, and blending is performed using multiple passes in a 4:2:0 format, and wherein a same subpicture data structure to be used when blending in the one pass and the separate pass.

18. (Original) The circuit of claim 17 wherein the palette is a dual-purpose palette which can operate as a texture palette or a subpicture palette.

19. (Original) The circuit of claim 18 wherein the palette, when operating as a subpicture palette includes indices based upon a native index and a native alpha value.

20. (Original) The circuit of claim 17 and further comprising a motion compensation circuit for motion compensating each of the luminance and chrominance values of the video signal prior to being blended with the subpicture signal.

21. (Currently Amended) A circuit for blending video signals and subpicture signals comprising:

a subpicture palette to output at least one subpicture value based on a palette index;

an alpha-blend unit to blend a set of subpicture Y values output from the subpicture palette with corresponding Y values of a video signal in a first pass, to blend a set of subpicture U values output from the subpicture palette with corresponding Y values of the video signal in a second pass and to blend a set of subpicture V values output from the subpicture palette with corresponding V values of the video signal in a third pass, the Y, U and V values of the video signal being provided to the alpha-blend unit an a planar format, the Y, U and V values of the video signal being provided in a 4:2:0 format, and blending is performed using multiple passes in a 4:2:0 format, and wherein a same subpicture data structure to be used when blending in the first pass, the second pass and the third pass.

22. (Currently Amended) A circuit for blending video signals and subpicture signals comprising:

a subpicture palette to output at least one subpicture value based on a palette index;

an alpha-blend unit to blend subpicture luminance and chrominance values output from the subpicture palette with corresponding luminance and chrominance values of a video signal

provided in a 4:2:0 planar format using multiple passes and blending is performed using multiple passes in a 4:2:0 format, and wherein a same subpicture data structure to be used when blending in the multiple passes.

23. (Currently Amended) A circuit for blending video signals and subpicture signals comprising:

a subpicture palette to output at least one subpicture value based on a palette index;

an alpha-blend unit to blend subpicture Y, U and V values output from the subpicture palette with corresponding Y, U and V values of a video signal provided in a 4:2:0 planar format using multiple passes and blending is performed using multiple passes in a 4:2:0 format, and wherein a same subpicture data structure to be used when blending in the multiple passes.

24. (Original) The circuit of claim 23 wherein the alpha-blend unit comprises an alpha-blend unit to blend each subpicture Y value with a Y value of the video signal based on a corresponding alpha value to generate a set of blended Y values, to blend each subpicture U value with a U value of the video signal based on a corresponding alpha value to generate a set of blended Y values and to blend each subpicture V value with a V value of the video signal based on a corresponding alpha value to generate a set of blended V values.

25. (Original) The circuit of claim 23 wherein the subpicture palette comprises a dual-purpose palette which can operate as either a texture palette or a subpicture palette.

26. (Original) The circuit of claim 24 wherein the palette is reloaded with a plurality of Y subpicture values to allow the alpha blend unit to blend each Y value of the video signal with a subpicture Y value in a first pass, the palette is reloaded with a plurality of U subpicture values to allow the alpha blend unit to blend each U value of the video signal with a subpicture U value, and the palette is reloaded with a plurality of V subpicture values to allow the alpha blend unit to

blend each U value of the video signal with a subpicture V value, the blending of the Y, U and V values being performed in separate passes.